ECE 3300L.02 Lab 6

Group H
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Lab Objective

- Configure the 7segdriver to allow 8 inputs for each digit of the display.
- Configure UPDOWN counter to count up and down starting from 0, including an enable and a reset (as switches)
- Convert UPDOWN decimal number to BCD using a BIN2BCD converter
- Top file to combine it all together
- Create “loading” method which allows user to load value into the UD counter

Code Breakdown

- SEGDRIVE.v
  - File to drive the 7 segment display
- UPDOWN.v
  - File to manage counting up and down using switches
  - Now includes loading technology
- CLKMANAGER.v
  - FIles to create artificial clock
- Top.v
  - File used to bring it all together and link inputs and outputs
- Bin2bcd.v
  - File used to convert from binary to bcd using the double dabble algorithm.
- constraints.xdc
  - XDC file used to manage hardware connections to Nexys A7 board

Challenges

- Our biggest challenge this lab was figuring out how to load the values efficiently. We could not figure out how to load the value in because of our up-down counter not outputting a ready BCD number. Our up-down counter sends that pure binary number to the bin2bcd module which then gets converted, but trying to load a value in that way was complicated.

Contribution

7seg driver - Mohamed Hamida

Up-Down Counter - Sherwin Sathish

Clock Manager - Mohamed Hamida & Sherwin Sathish

Binary to BCD Converter - Mohamed Hamida

Top FIle - Mohamed Hamida and Sherwin Sathish

Load Functionality - Sherwin Sathish

Lab Report - Sherwin Sathish

Powerpoint Slides - Mohamed Hamida

Demonstration - Sherwin Sathish

Project compiling and uploading - Mohamed Hamida